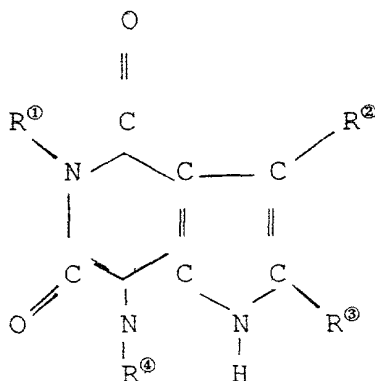


From 0 to about 10% by weight of a nitrogen containing stabilizer such as dicyandiamide, melamine, urea, formoguanamine, dimethyl hydantoin, 2-phenylindoles, thiourea, guanidine, aminocrotonates, N-substituted maleimides, uracil, the 1,3-dialkyl-6-amino-uracil derivatives described in German Offenlegungsschrift 19,741,778 by Ciba Specialty Chemicals Holding Inc., and the pyrrolodiazine diones described in published Australian Patent Application No. AU-A-48232/96 by Ciba-Geigy, and the like may also be used in this invention as a co-stabilizer. Of particular interest are the pyrrolodiazine diones described by the formula:



wherein R¹, R², R³, and R⁴ are independently hydrogen or C¹-C⁴ alkyl. Examples of compounds contemplated for use in this invention include the 1H-pyrrolo[2,3-d]pyrimidine-2,4(3H,7H)diones exemplified by Compound Nos. 103, 111, 123, 129, and 131 of said Australian Patent Application, which have the following substituents:

- | | |
|---------|-----------------------|
| No. 103 | 1,3,6-trimethyl; |
| No. 111 | 1,3,6,7-tetramethyl; |
| No. 123 | none; |
| No. 129 | 1,3-diethyl,6-methyl; |

No. 131 1,3-di-n-butyl,6-methyl;

Said compounds may be prepared by the method described by S. Senda and K. Hirota in Chem. Pharm. Bull., 22(7), 1459-1467(1974) or by the reaction of the corresponding aminouracil with molar excesses of chloroacetaldehyde and ammonium acetate in water at about 65°C until a precipitate forms or with molar excesses of acetoxyacetone and ammonium acetate in water at reflux for 12 hours. German Offenlegungsschrift 19,741,778 and Australian Patent Application No. AU-A-48232/96 are each incorporated herein by reference.

Likewise there can be included from 0-10% by weight of the halogen-containing polymer of a polyol stabilizer for such resins. Thus there can be included glycerol, sorbitol, pentaerythritol, mannitol and polyethers such as diethylene glycol, triethylene glycol, tetraethylene glycol, tripropylene glycol, and the like.

In addition to the stabilizer compositions of this invention, the halogen-containing polymer compositions of this invention may contain plasticizers, as mentioned above in regard to flexible PVC, and conventional additives such as pigments, fillers, blowing agents, dyes, ultraviolet light absorbing agents, antioxidants, densifying agents, biocides, and the like.

An antioxidant may be added in an amount of 0.01-10%, preferably 0.1-5% by weight of the polymer. Phenolic antioxidants are particularly suitable and are exemplified by 2,6-di-t-butyl-p-cresol, butylated hydroxyanisole, propyl gallate, 4,4'-thiobis(6-t-butyl-m-cresol), 4,4'-cyclohexylidene diphenol, 2,5-di-t-amyl hydroquinone, 4,4'-butylidene bis(6-t-butyl-m-cresol), hydroquinone monobenzyl ether, 2,2'-methylene-bis(4-methyl-6-t-butyl phenol), 4,4'-

methylen-bis(2,6-di-t-butyl phenol), 2-t-butyl-4-dodecyloxy phenol, 2-t-butyl-4-octadecyloxy phenol, 2,6-butyl-4-decyloxy phenol, p-amino phenol, N-lauryloxy-p-amino phenol, 4,4'-thiobis(3-methyl-6-t-butyl phenol), t-butyl phenol, bis [o-(1,1,3,3-tetramethyl butyl)phenol] sulfide, p-t-butylphenol-formaldehyde A-stage resin, 4-acetyl- β -resorcylic acid, 4-dodecyloxy-2-hydroxybenzophenone, the n-dodecyl ester of 3-hydroxy-4-(phenyl carbonyl) phenoxyacetic acid, and 3-hydroxy-4-(phenylcarbonyl)phenyl palmitate.

Conventional lubricants for vinyl chloride resins such as low molecular weight polyethylene, i.e. polyethylene wax, fatty acid amides, e.g., lauramide and stearamide, bis-amides, e.g. decamethylene bis-amide, and fatty acid esters, e.g. butyl stearate, glyceryl stearate, linseed oil, palm oil, decyloleate, corn oil, cottonseed oil, hydrogenated cottonseed oil, stearic acid, calcium stearate, mineral oil, montan wax, oxidized polyethylene and the like can also be included.

The following examples further illustrate the preparation of blocked mercaptans of this invention, the preparation of stabilizer compositions of this invention, and the advantages of said blocked mercaptans and stabilizer compositions.

The Preparation of Blocked Mercaptans

REFERENCE EXAMPLE 1

H-NMR spectroscopy was used to determine the molecular structure of 2-S-(decanoyloxyethylthio)tetrahydropyran or 2-S-tetrahydropyranyl)thioethylcaprate which was prepared by adding 42.0 grams (0.50 mole) of 3,4-dihydropyran to 112.2 grams (0.50 equivalent) of mercaptoethylcaprate (14.7 % SH) in the presence of an acid catalyst over a period of 45 minutes while maintaining a nitrogen atmosphere and a temperature below 35°C and then heating it to 50°C and holding that